09-20-06

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Application Number

PTO/SB/21 (09-04): The Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

10/656,471

TRANSMITTAL Filing Date 09/05/2003 **FORM** First Named Inventor James Alfred Dunnam, et al. Art Unit 3643 **Examiner Name** Parsley, David J. (to be used for all correspondence after initial filing) Total Number of Pages in This Submission DUQU-01 Attorney Docket Number 21 **ENCLOSURES** (Check all that apply) After Allowance Communication to TC XX Fee Transmittal Form Drawing(s) PTO/SB/21 Appeal Communication to Board Licensing-related Papers Fee Attached of Appeals and Interferences Appeal Communication to TC X Petition Amendment/Reply (Appeal Notice, Brief, Reply Brief) Petition to Convert to a **Proprietary Information** After Final **Provisional Application** Power of Attorney, Revocation Status Letter Affidavits/declaration(s) Change of Correspondence Address Other Enclosure(s) (please Identify **Terminal Disclaimer Extension of Time Request** below): Request for Refund **Express Abandonment Request** CD, Number of CD(s)_ Information Disclosure Statement Landscape Table on CD Certified Copy of Priority Remarks Document(s) Fee Transmittal is the Credit Card Payment Form Reply to Missing Parts/ Incomplete Application Reply to Missing Parts under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Firm Name Annelin and Gaskin Signature Printed name 'Gaskin Reg. No. Date 30,381 06 CERTIFICATE OF TRANSMISSION/MAILING I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below: Signature Date Mary J. Gaskin 19 Typed or printed name

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re: Application Serial No.: 10/656,471

Filing Date: 09/05/2003

First Named Inventor: James Alfred Dunnam

Group Art Unit: 3643

Examiner's Name: Parsley, David J.

Attorney Docket No.: DUQU-01

APPELLANTS', JAMES ALFRED DUNNAM AND MAURICIO F. QUINTANA, MAIN BRIEF

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I. REAL PARTY IN INTEREST

The real parties in interest with respect to the present application are James Alfred Dunnam and Mauricio F. Quintana, both individuals, who are the inventors of the invention disclosed in the application. The patent application has not been assigned or licensed.

II. RELATED APPEALS AND INTERFERENCES

Presently, there are no other appeals or interferences known to appellants, or appellants' legal representative, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1 through 26 stand rejected.

Appellant is appealing the rejections of claims 1 through 26.

The text of claims 1 through 26 is set out in the Appendix.

IV. STATUS OF AMENDMENTS

Appellants, hereinafter "applicants," have filed no amendment subsequent to the final rejection, which was mailed on April 21, 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to shotgun ammunition, more specifically tracers used to make the shot visible to shooters.

Independent claim 1 claims a cylindrical ballistic tracer platform (p. 8, l. 13; Fig. 3,

reference character **10**) for holding and carrying an integrated inseparable tracer element (Fig. 3, reference character **11**) having a bottom (p. 8. II. 6-9), the tracer platform designed for use with a shotgun shell having a bore, a shot holder and propellant (p. 8, II. 5-8, Fig. 1 and Fig. 2), the tracer platform to be positioned within the shotgun shell to fill the bore between the shot holder (Fig. 2, reference character **17**) and the propellant (reference character **13**); (see Fig. 2), the tracer platform having a closed nose to be positioned proximate to the propellant (Fig. 2, combined with Fig. 3), the tracer element being disposed away from the shot holder (Fig. 2 combined with Fig. 3), the tracer element filling a coaxial cavity having a lower end at the bottom of the tracer platform (p. 8, II. 6-7; Fig. 2), the bottom of the tracer platform and the bottom of the tracer element being shaped to leave a generally concave cavity (Fig. 2, reference character **16**) which acts as a gas seal upon ignition of the propellant (p. 8, II. 8-10; Fig. 2; p. 8, II. 14-15; Fig. 3).

Dependent claim 5 further claims a tracer platform with a ballistic coefficient equivalent to a shot pellet's ballistic coefficient (p. 5, ll. 12-13).

Dependent claim 9 further claims a ballistic tracer platform wherein the tracer platform has formed therein symmetrical cavities for holding weights for the adjustment of the platform's weight and flight characteristics (p. 10, II. 8-14; Fig. 6).

Independent claim 13 claims a shotgun shell with a tracer for making shot projectiles visible to a shooter comprising:

- (a) a hollow shotgun shell (p. 8, l. 3; Fig. 1, reference character 1) having a bore, a lower end and an upper end (Fig. 1);
- (b) a base with primer located inside the lower end of the shotgun shell (p. 8, II. 7-

- 8; Fig. 2, reference characters 3, 12);
- (c) propellant positioned proximate to the primer (p. 8, II. 7-8; Fig. 2, reference characters 12, 13);
- (d) a shot holder holding shot pellets located inside the upper end of the shotgun shell (p. 8, ll. 11-12; Fig. 2, reference characters 17, 18);
- (e) a cylindrical ballistic tracer platform (p. 8, l. 13; Fig 3, reference character 10) for holding and carrying an integrated inseparable tracer element (Fig. 3, reference character 11) having a bottom (p. 8, ll. 6-9), the tracer platform being positioned inside the shotgun shell to fill the bore between the shot holder (Fig. 2, reference character 17) and the propellant (Fig. 2, reference character 13), the tracer platform having a closed nose and a bottom (Fig. 2 combined with Fig. 3), the tracer element filling a coaxial cavity having a lower end at the bottom of the tracer platform (p. 8, ll. 6-7; Fig. 2), the bottom of the tracer platform and the bottom of the tracer element being shaped to leave a generally concave cavity (Fig. 2, reference character 16) which acts as a gas seal upon ignition of the propellant (p. 8, ll 8-10; Fig. 2; p. 8, ll. 14-15; Fig. 3).

Dependant claim 17 further claims a ballistic tracer platform with a ballistic coefficient equivalent to a shot pellet's ballistic coefficient (p. 5, ll. 12-13).

Dependent claim 21 further claims a ballistic tracer platform wherein the tracer platform has formed therein symmetrical cavities for holding weights for the adjustment of the platform's weight and flight characteristics (p. 10, II. 8-14; Fig. 6).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Whether claims 1, 2, 4, 8, 10 through 14, 16, 20, and 22 through 26 are unpatentable under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 1,457,337 to Barrows.
- B. Whether claims 5 and 17 are unpatentable under 35 U.S.C. §103(a) as being obvious over Barrows in view of U.S. Patent No. 3,262,390 to Cowles *et al.*
- C. Whether claims 9 and 21 are unpatentable under 35 U.S.C. §103(a) as being obvious over Barrows in view of FR Patent No. 2,598,213.
- D. Whether claims 3, 6, 7, 15, 18, and 19 are unpatentable under 35 U.S.C. §103(a) as being unpatentable under Barrows in view of the suggested combinations of U.S. Patent No. 3,262,390 to Cowles *et al.*, U.S. Patent No. 6,694,887 to Diller, or U.S. Patent No. 4,841,866 to Miesner.

VII. ARGUMENT

- A. Rejection under 35 U.S.C. §102(b) as being anticipated by Barrows.
- 1. <u>The Barrows Reference</u> Generally, for claims 1,2, 4, 8, 10 through 14, 16, 20, and 22 through 26.

The Examiner erred when he rejected claims 1, 2, 4, 8, 10 through 14, 16, 20, and 22 through 26 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 1,457,337 to Barrows.

The Barrows patent application, which was filed in the year 1919, describes a shotgun shell with a tracer projectile. As shown in the figures and as described in the

specifications, the Barrows invention relates to a conventional shotgun shell 1 with 8, "the powder wad, of felt or other fibrous material, which will expand or contract in passing through the barrel of the gun" (Barrows, p. 1, II. 69-72). Inserted into the wad 8 at the centerline is "9 [which] represents the metal projectile or capsule." (p. 1, Il. 72-73). At the upper end of the metal projectile 9 is 10, "a weight of lead or other heavy metal." (p. 1, ll. 74-75). Inside the projectile 9, below the metal weight 10, is the smoke composition 11 (see Fig. 1). Above the metal weight 9 is shoulder 20, "designed to reduce gas leakage and giving a greater bearing against the shot charge." (p. 1, II. 84-86). After ignition of the powder, the volume of gas and heat "presses the wad 8 and the projectile 9 forward, carrying the shot 6 and shot wad 7 before them. The resistance of inertia of the shot charge holds the tracer projectile 9 in place in the wad 8 . . . " (p. 1., II, 90-94). Thereafter, friction of the gun barrel "retards the wad 8, and the tracer projectile 9, having no more resistance from the shot charge, leaves its bore in the wad, impelled partly by its inertia and partly by the pressure of the expanding powder gases, and follows the trajectory of the multiple shot charge" (p. 1, II. 103-109).

The Barrows invention is entirely different from the invention disclosed in the present application. The tracer platform of the present invention fills the space typically occupied by the wad, integrating four elements (the wad, a tracer element, a tracer projectile, and a gas seal) into a single, integrated inseparable, structurally sound artifact. Further, the Barrows invention fails to provide a "generally concave cavity which acts as a gas seal upon ignition of the propellant." Finally, unlike the tracer projectile 9 in Barrows, which separates from the wad 8 after ignition, the tracer element claimed herein remains

embedded in the tracer platform, which follows the shot string, remaining centered with the pattern of shot pellets (specification, p. 11, Figs. 7A-D; Fig. 8).

2. Claims 1, 2, 4, 8, 10, 11, 12, and 25

The Examiner's rejection of claim 1 as being anticipated by Barrows is simply wrong, requiring a strained reading of the Barrows reference. The Examiner finds Barrows' metal projectile to be "a cylindrical ballistic tracer platform — at 9 or 13 or 9a, 17, for holding and carrying an integrated, inseparable tracer element — at 9 - 10 or 10 or 17 ..." (Office action at p. 2, II. 13-14). The Examiner claims that the metal projectile 9 (tracer platform) fills the bore between the shot holder¹ and the propellant, referring generally to Figure 1. However, even a cursory glance at the figures shows the statement is false. As can be seen in the figures, the wad 8 fills the bore between the shot and the propellant; and the metal projectile 9 plainly fits into a coaxial cavity inside the wad 8.

Further, the Examiner refers generally to Figures 1 through 4 to support his finding that the tracer element 10 or 17 is "disposed away from the shot holder"; fills "a coaxial cavity having a lower end at the bottom of the tracer platform"; and that "the bottom of the tracer platform and the bottom of the tracer element being shaped to leave a generally concave cavity which acts as a gas seal upon ignition of the propellant . . ." (Office action, p. 3, II. 3-8). None of these statements is true. The "tracer element" to which the Examiner

¹Since Barrows does not have a shot holder like that in the present invention (17), (instead Barrows has a shot space and shot 6), the Examiner feels free to define Barrows' shot holder as being "the combination of the cover at the front end of item 1 and item 8 (the wad). This is an attempt to define a comparable structure where none exists.

refers "is a weight of lead or other heavy metal (Barrows, p. 1, I. 74), which is disposed next to the shot space and shot, not away from the shot holder (as noted in footnote 1, there is none). This lead weight does <u>not</u> fill a coaxial cavity having a lower end at the bottom of the tracer platform; it occupies only a small portion of the cavity at the <u>upper</u> end of the tracer platform. Barrows does not disclose a gas seal, nor do the figures show one. The "cavity" under the lead weight **10**, **17** cannot act as a gas seal because Barrows fills it with a smoke composition **11** (and plugs it with a fuse **12** under the smoke composition **11**, as shown in Fig. 1).

Clearly, all the elements in claim 1 are not found in Barrows. Therefore, claim 1 is not anticipated by the reference. Claim 1 should be allowable over Barrows.

Claims 2, 4, 8, 10, 11, 12 and 25, which depend from claim 1, should be allowable as well.

3. Claims 13, 14, 16, 20, 22, 23 24 and 26

The Examiner's rejection of claim 13 as being anticipated by Barrows is also simply wrong, requiring a strained reading of the Barrows reference. Since Barrows does not have a shot holder like that in the present invention (17), (instead, Barrows has a shot space and shot 6), the Examiner feels free to define Barrows' shot holder as being "the combination of the cover at the front end of item 1 and item 8 (the wad) (Office action at p. 4, II. 8-9). This is an attempt to define a comparable structure where none exists. The Examiner finds Barrows' metal projectile to be "a cylindrical ballistic tracer platform – at 9 or 13 or 9a, 17, for holding and carrying an integrated, inseparable tracer element – at 9 - 10 or 10 or 17

his statement that the metal projectile **9** (tracer platform) fills the bore between the shot holder and the propellant. However, even a cursory glance at the figure shows the statement is false. As can be seen in the figure, the <u>wad 8</u> fills the bore between the shot holder and the propellant; and the metal projectile **9** plainly fits into a coaxial cavity inside the wad **8**.

Further, the Examiner refers generally to Figures 1 through 4 to support his finding that the tracer element 10 or 17 fills "a coaxial cavity having a lower end at the bottom of the tracer platform"; and that "the bottom of the tracer platform and the bottom of the tracer element being shaped to leave a generally concave cavity which acts as a gas seal upon ignition of the propellant . . ." (Office action, p. 4, II. 15-19). Neither of these statements is true. The "tracer element" to which the Examiner refers "is a weight of lead or other heavy metal (Barrows, p. 1, I. 74), which does <u>not</u> fill a coaxial cavity having a lower end at the bottom of the tracer platform; it occupies only a small portion of the cavity at the <u>upper</u> end of the tracer platform. Barrows does not disclose a gas seal, nor do the figures show one. The "cavity" under the lead weight 10, 17 cannot act as a gas seal because Barrows fills it with a smoke composition 11 (and plugs it with a fuse 12 under the smoke composition 11, as shown in Figure 1).

Clearly, all the elements in claim 13 are not found in Barrows. Therefore, claim 13 is not anticipated by the reference. Claim 13 should be allowable over Barrows.

Claims 14, 16, 20, 22, 23, 24 and 26, which depend from claim 13, should be allowable as well.

B. Rejection of claims 5 and 17 under 35 U.S.C. §103(a) as being obvious over Barrows in view of Cowles et al.

The Examiner erred when he rejected claims 5 and 17 under 35 U.S. §103(a) as being unpatentable over Barrows as applied to claims 1 or 13, and further in view of U.S. Patent No. 3, 262,390 to Cowles *et al.*

The Examiner argued it would be obvious "to take the device of Barrows and add the tracer platform and shot having the same ballistic coefficient of Cowles *et al.*, so as to allow for the tracer platform to accurately follow the path of the shot pellets upon ignition of the propellant in the shell" (Office action at p. 6, Il. 1-4). However, nothing in Barrows suggests making such a modification. The "tracer platform" in Cowles is spherical and is positioned above the wad **8**, with the shot arranged around it. The tracer projectile of Barrows, on the other hand, is positioned inside the wad **8**, and it stays inside the wad until, after ignition, the shot charge reaches the muzzle of the shotgun (Barrows, p. 1, Il. 99-105). Clearly, it would not be obvious to make Barrows' tracer projectile and the shot of the same ballistic coefficient. Claims 5 and 17 should be allowable over the combination of references cited by the Examiner.

C. Rejection of claims 9 and 21 under 35 U.S.C. §103(a) as being obvious over Barrows in view of FR Patent No. 2,598,213.

In rejecting these claims, the Examiner stated that Barrows does not disclose the tracer platform has formed therein symmetrical cavities for holding weights for adjustment of the tracer platform's weight and flight characteristics. The Examiner found the tracer

platform at **6**, claiming Fig. 5 shows it has formed therein symmetrical cavities, at either end, for holding weights (**5**) for adjustment of the tracer platform's weight and flight characteristics. Applicant would point out that nothing in the French patent suggests its combination with a tracer platform, much less one like that in Barrows. Instead, the French patent describes a cartridge for self-defense that uses a projectile charge made of low-density sand and/or gravel. Fig. 5 simply shows one of the options that can be used in filling the cartridge (a "regulator" **6** placed between two rubber disks **5**, **5**). Nowhere does the patent describe that the regulator "holds" the disks, or that the disks provide for adjustment of the regulator's weight and flight characteristics. In any event, claims 9 and 21 depend from claims 1 and 13, respectively, which should be allowable over Barrows. Claims 9 and 21 should be allowable over the combination of references as well.

D. Rejection of claims 3, 6, 7, 15, 18, and 19 under 35 U.S.C. §103(a) as being obvious over Barrows in view of the suggested combinations of Cowles *et al.*, Diller or Miesner.

Claims 3, 6 and 7 depend from independent claim 1, which should be allowable; claims 15, 18 and 19 depend from independent claim 13, which should be allowable. Claims 3, 6, 7, 15, 18 and 19, therefore, should be allowable as well.

E. Conclusion

The Examiner's rejection of applicant's claimed invention should not be maintained. Throughout the prosecution of this application; applicant has amended the claims several times to more clearly define the subject matter of his invention. After applicant successfully overcame the Brownsdon reference (U.S. Patent No. 1,887,990, which describes a tracer

cartridge and which was patented in 1932), the Examiner based his rejections primarily on the Barrows reference (which was cited in the Brownsdon patent). However, as argued herein, the Barrows reference discloses a device that does not anticipate or make obvious

the present invention.

Applicant's invention is highly novel, useful, and nonobvious. It provides a platform for a tracer projectile so that the projectile has an accurate, predictable, and centered

trajectory to the shot string, without interference from the shot's trajectory.

The Examiner's reliance on the Barrows reference is flawed. All the claimed elements of the present invention are not found in Barrows, which discloses a tracer projectile that is inserted into a conventional wad, and which, when discharged from the shotgun, is notoriously inaccurate. The invention disclosed in the present application overcomes the problems of the prior art, resulting in a superior tracer for use with a shotgun

shell.

For the foregoing reasons, applicant submits that the Examiner's rejection of claims 1 through 26 is in error and that it should be reversed. Applicant hereby requests that the Board withdraw the Examiner's rejection and allow claims 1 through 26.

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VIII. APPENDIX

CLAIMS

- 1. (Currently Amended) A cylindrical ballistic tracer platform for holding and carrying an integrated inseparable tracer element having a bottom, the tracer platform designed for use with a shotgun shell having a bore, a shot holder and propellant, the tracer platform to be positioned within the shotgun shell to fill the bore between the shot holder and the propellant, the tracer platform having a closed nose to be positioned proximate to the shot holder and a bottom to be positioned proximate to the propellant, the tracer element being disposed away from the shot holder, the tracer element filling a coaxial cavity having a lower end at the bottom of the tracer platform, the bottom of the tracer platform and the bottom of the tracer element being shaped to leave a generally concave cavity which acts as a gas seal upon ignition of the propellant.
- 2 (Original) The ballistic tracer platform of claim 1 wherein the tracer element comprises a cylindrical housing containing pyrotechnic material susceptible to ignition upon burning of the propellant.
- 3. (Original) The ballistic tracer platform of claim 2 wherein the housing of the tracer element further contains a fire-suppressing agent.
- 4. (Original) The ballistic tracer platform of claim 1 wherein the tracer element is selected from the group consisting of electrical material, reflective material, chemiluminescent material, and pyrotechnic material.
- 5. (Previously Presented) The ballistic tracer platform of claim 1 wherein the tracer platform has a ballistic coefficient equivalent to a shot pellet's ballistic coefficient.

- 6. (Previously Presented) The ballistic tracer platform of claim 5 wherein the tracer platform is made from one or more of the materials selected from the group consisting of aluminum, brass, lead, neoprene, nylon, polyethylene, polyurethane, rubber, steel, polytetrafluoroethylene, and titanium.
- 7. (Original) The ballistic tracer platform of claim 1 wherein the tracer platform further has a diameter in the range of 0.2 inches to 1.25 inches.
- 8. (Original) The ballistic tracer platform of claim 1 wherein the nose of the tracer platform has a shape selected from the group consisting of flat, conical, and spherical.
- 9. (Original) The ballistic tracer platform of claim 1 wherein the tracer platform has formed therein symmetrical cavities for holding weights for the adjustment of the tracer platform's weight and flight characteristics.
- 10. (Original) The ballistic tracer platform of claim 1 wherein the tracer platform has an outer surface with grooves formed therein.
- 11. (Original) The ballistic tracer platform of claim 1 wherein the tracer platform has an outer surface with symmetrically-positioned fins attached thereto.
- 12. (Original) The ballistic tracer platform of claim 1 wherein the tracer platform has an outer surface with orifices formed therein.
- 13. (Currently Amended) A shotgun shell with a tracer for making shot projectiles visible to a shooter comprising:
 - (a) a hollow shotgun shell having a bore, a lower end and an upper end;
 - (b) a base with primer for ignition located inside the lower end of the shotgun shell;

- (c) propellant positioned proximate to the primer;
- (d) a shot holder holding shot pellets located inside the upper end of the shotgun shell;
- (e) a cylindrical ballistic tracer platform for holding and carrying an integrated inseparable tracer element having a bottom, the tracer platform being positioned inside the shotgun shell to fill the space bore between the shot holder and the propellant, the tracer platform having a closed nose and a bottom, the tracer element filling a coaxial cavity having a lower end at the bottom of the tracer platform, the bottom of the tracer platform and the bottom of the tracer element being shaped to leave a generally concave cavity which acts as a gas seal upon ignition of the propellant.
- 14. (Original) The shotgun shell of claim 13 wherein the tracer element comprises a cylindrical housing containing pyrotechnic material susceptible to ignition upon burning of the propellant.
- 15. (Original) The shotgun shell of claim 13 wherein the housing of the tracer element further contains a fire-suppressing agent.
- 16. (Original) The shotgun shell of claim 13 wherein the tracer element is selected from the group consisting of electrical material, reflective material, chemiluminescent material, and pyrotechnic material.
- 17. (Previously Presented) The shotgun shell of claim 13 wherein the ballistic tracer platform has a ballistic coefficient equivalent to a shot pellet's ballistic coefficient.
- 18. (Previously Presented) The shotgun shell of claim 17 wherein the ballistic tracer

platform is made from one or more of the materials selected from the group consisting of aluminum, brass, lead, neoprene, nylon, polyethylene, polyurethane, rubber, steel, polytetrafluoroethylene, and titanium.

- 19. (Original) The shotgun shell of claim 13 wherein the ballistic tracer platform further has a diameter in the range of 0.2 inches to 1.25 inches.
- 20. (Original) The shotgun shell of claim 13 wherein the nose of the ballistic tracer platform has a shape selected from the group consisting of flat, conical, and spherical.
- 21. (Original) The shotgun shell of claim 13 wherein the ballistic tracer platform has formed therein symmetrical cavities for holding weights for the adjustment of the tracer platform's weight and flight characteristics.
- 22. (Original) The shotgun shell of claim 13 wherein the ballistic tracer platform has an outer surface with grooves formed therein.
- 23. (Original) The shotgun shell of claim 13 wherein the ballistic tracer platform has an outer surface with symmetrically-positioned fins attached thereto.
- 24. (Original) The shotgun shell of claim 13 wherein the ballistic tracer platform has an outer surface with orifices formed therein.
- 25. (New) The ballistic tracer platform of claim 1 wherein the tracer element is made inseparable from the ballistic tracer platform by means selected from gluing, interference fitting, and injection molding.
- 26. (New) The shotgun shell of claim 13 wherein the tracer element is made inseparable from the ballistic tracer platform by means selected from gluing, interference fitting, and injection molding.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.

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